features would be more sustainable because they would be continuously connected to the river resource and nourished by its sediment and nutrients.

2.0 ESTABLISH PLANNING OBJECTIVES AND EVALUATION CRITERIA (PHASE I)

A Goals and Endpoints Group was developed within the PDT. This group reviewed information from all previous study efforts to identify ecological goals and possible endpoints for potential long-range, large-scale ecosystem restoration strategies. The underlying objectives for the pursuit of these restoration features were the continued productivity and protection of the environment, economy, and the culture of southern Louisiana and their contributions to the national economy. Criteria for identifying appropriate strategies included: resulting overall habitat suitability in the coastal zone; wetland-building potential; ability to assimilate nitrogen and reduce overall contributions to the Gulf of Mexico; and the effect on coastal economic activity. Phase I established two "provinces," the Deltaic Plain and Chenier Plain, within the Louisiana coastal zone for planning purposes. These were further divided into four functional ecological subprovinces.

The LCA has a variety of potential future landscapes, ranging from a landscape where no additional actions are taken to address land loss, to a landscape where extensive large-scale efforts are made to revitalize the coast. Deciding which future landscape to plan for is a complex decision, involving difficult and numerous environmental, social, and economic constraints (or trade-offs). In order to evaluate the improvements to the ecosystem in the context of these various constraints and decide upon a course of action in an ecosystem restoration plan, a variety of options must be reviewed. Thus, a key first step in developing a plan for restoring coastal Louisiana is to define different possible future landscapes (or planning scales) and assess potential alternatives.

Using the planning objectives and the "Comprehensive Study Guiding Principles for Plan Formulation," the PDT defined planning scales to facilitate the development of alternatives. For the purposes of this report, the term "scale" does not refer to a specific state of the landscape. Rather, it reflects the degree to which environmental processes would be restored or reestablished, and the resulting ecosystem and landscape changes that would be expected over the next 50 years. Restoring impaired environmental processes in coastal Louisiana would affect the net rate at which coastal wetlands are lost or gained. Therefore, the planning scales for LCA are expressed in terms of the net rate of landscape loss or gain in coastal Louisiana.

The reference point for the planning scales is the estimate of future net land loss rates under the No Action scenario. For both the Deltaic Plain and Chenier Plain provinces, there are estimates of the annual net loss of wetlands over the next 50 years assuming that no additional restoration efforts (beyond the Coastal Wetland Planning, Protection and Restoration Act (CWPPRA) and other existing programs) are implemented.

Based on professional judgment and extensive experience in coastal Louisiana restoration, the PDT determined that the highest, most ambitious scale would be an annual net increase in wetland acreage equal to 50 percent of the projected rate of loss. (This uppermost scale is referred to as "*Increase.*") Obviously, the lowest possible scale would be no further action above and beyond the existing projects and programs. The PDT determined that no net loss of coastal wetlands would be an appropriate intermediate scale, consistent with the long-held National wetlands policy of no net loss. (This scale is referred to as "*Maintain.*") Finally, reducing the projected loss rate by 50 percent was judged to be another appropriate intermediate scale, as it is sufficiently different from the other scales and would offer an option that, while not aggressively addressing the problem, could nevertheless provide substantial benefits over no action. (This scale is referred to as "*Reduce.*")

The use of acreage of land as a basis for the planning scales for this stage in the process in no way suggests that the other important objectives did not receive full consideration throughout the planning process. Acreage was used at this stage in the process not only because it was the simplest and most tangible measure around which alternatives could be formed, but also because it is an appropriate surrogate for the many important functions and values provided by Louisiana's coastal wetlands. In this sense, acreage was seen as an umbrella for the other objectives. Once alternatives were identified, the effects of alternatives relative to the other objectives were quantified during later stages of the planning process via hydrodynamic, ecological, and desktop modeling evaluations and benefit assessments.

Based on projections from the U.S. Geological Survey (USGS) (reference appendix B), the No Action annual land loss rate is estimated to be -10 mi^2/yr [-25.9 km^2/yr] (the minus sign designating a net loss of land). The ecological planning scales are based on reduction or reversal of the annual net land-loss rate. The scales are defined as follows:

- *No Action (Future Without Project):* The annual land-loss rate if no additional features are taken to restore coastal Louisiana = -10mi^2/yr [-25.9 km^2/yr]
- *Reduce:* The annual net land-loss rate reduced by 50 percent = -5mi^2/yr [-12.9 km^2/yr]
- *Maintain:* There is no net annual loss of land (land gain would equal land loss) = 0 mi^2/yr [0 km^2/yr]
- *Increase:* The rate of annual net land-gain is 50 percent of the No Action annual net land loss rate = +5 mi^2/yr [+ 12.9 km^2/yr]

Table E-1.
Planning Scales by Subprovince.

	Land Change (ac/yr)			
	FWO [1]	**Reduce [2]**	**Maintain [2]**	**Increase [2]**
Subprovince 1	-806 ac/yr	+403 ac/yr	+806 ac/yr	+1,209 ac/yr
Subprovince 2	-2,291 ac/yr	+1,146 ac/yr	+2,291 ac/yr	+3,437 ac/yr
Subprovince 3	-2,842 ac/yr	+1,421 ac/yr	+2,842 ac/yr	+4,263 ac/yr
Subprovince 4	-461 ac/yr	--	+461 ac/yr	+692 ac/yr
Total	-6,400 ac/yr	+2,970 ac/yr	+6,400 ac/yr	+9,601 ac/yr
Total (mi^2/yr)	-10.0	+4.6	+10.0	+15.0

Notes:
1. *Numbers for FWO (future without project) are an estimated loss rate, and are subject to change.*
2: *Numbers for "reduce," "maintain," and "increase" scales are the gross amount of acres restored and/or protected. For net acreage change in any subprovince, the FWO number should be subtracted from the gross acreage protected.*

2.1 Province and Subprovince Planning Areas

Two major, but distinct, geological processes formed the Louisiana coast. One such process was the formation of sequential deltaic lobes of the Mississippi River, resulting in the Deltaic Plain in the eastern and central part of Louisiana's coast. The second major process was the formation of a series of beach ridges, or cheniers, that form the Chenier Plain in the western part of the state. For planning purposes, these two geomorphic provinces have been subdivided into four subprovinces, based on logical dividing lines between hydrologic basins.

Under the CWPPRA and Coast 2050 processes, Louisiana's coastal area is divided into four "regions" and nine hydrologic "basins." The hydrologic basins are further divided into mapping units that reflect similar problems and potential solutions. The LCA process has modified the CWPPRA divisions into "provinces" and "subprovinces" using different geologic and hydrologic criteria. The scales discussed above will initially be used at the subprovince level, with the exception of Subprovince 4. Therefore, due to relatively lower projected loss rates, the "reduce" scale has been dropped in recognition of the apparent attainability of the higher scales.

3.0 ASSESS RESTORATION STRATEGIES FROM THE COAST 2050 PLAN (PHASE II)

The PDT, in conjunction with the VT, and with suggestions from the individual members of the FDT, consisting of representatives from Federal and state agencies, academia, and the public, reviewed the Coast 2050 Plan and the LCA Section 905(b) reconnaissance report (for which the Coast 2050 Plan was the basis). These reports identified perceived problems in both